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EXAMINER	
KADING, JOSHUA A	

ART UNIT	PAPER NUMBER
2661	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/755,339	RAKIB ET AL.	
	Examiner	Art Unit	
	Joshua Kading	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication; even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5-7, 28, 72, 74-83, and renumbered claims 84-106* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *74-82* is/are allowed.

6)☒ Claim(s) *5, 6, 28, 72, renumbered claims 84-87, 95, 97-100, and 104-106* is/are rejected.

7)☒ Claim(s) *7, 83, renumbered claims 88-94, 96, and 101-103* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/01, 1/02, 2/02.* 7/02.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: Most of the amendments to the specification filed with the preliminary amendment on 3 January 2001 have not been entered because the reference points made for the beginning of applicant's changes do not exist in the original specification. For example, the first occurrence of this is with reference to page 143, line 26. Applicant instructs the insertion of an amendment after the period on line 26. However, there is no period on line 26 of page 43 of the original specification.

Appropriate correction is required.

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 85-107 have been renumbered 84-106 respectively. Applicant indicated a cancellation of claim 84 in the preliminary amendment filed 3 January 2001, however, there is no claim 84, therefore the claims must be renumbered as indicated.

As discussed in a telephone interview with Mr. Ronald Craig Fish on 28 September 2004, claim 83 was intended to be cancelled, as such claim 83 is objected to because it should be cancelled.

Claims 5-7, 72, 74-78, 80, 81, 84, 96, 97, 102, 103, 105, and 106 are objected to because of the following informalities:

Claim 5, line 3 states "store it in". This should be changed to --store said downstream data in--.

Claim 6, lines 2 and 4; and claim 7, lines 2 and 4 state "the phase and frequency". These should be changed to --a phase and frequency--.

Claim 72, lines 4 and 12 state "framing/addressing/packetizing". These should be changed to --framing and addressing and packetizing-- or --framing or addressing or packetizing--.

Claim 72, lines 11 and 13 state "said data". These should be changed to --said payload data--.

Claim 72, line 26 states "the inverse code". This needs to be changed to --an inverse code--.

Claim 72, line 29 states "the spectrum". This needs to be changed to --a spectrum--.

Claim 72, line 35 the section "the process or achieving" should be deleted. It is not necessary and adds confusion.

Claim 72, line 37 states "the presence of". This needs to be changed to --a presence of--.

Claim 74, line 26 states "the number". This needs to be changed to --a number--.

Claim 74, line 27 states "the amplitude". This needs to be changed to --a amplitude--.

Claim 75, line 3 states "the bits". This needs to be changed to --a bits--.

Claim 76, lines 4-5 states "the same timeslot of an earlier time to generate the same element". This needs to be changed to --a same timeslot of an earlier time to generate a same element--.

Claim 77, line 2 states "the order". This needs to be changed to --an order--.

Claim 78, line 3 states "an equalization process". This should be changed to --equalization--.

Claim 78, line 10 states "the predistortion". This needs to be changed to --a predistortion--.

Claim 80, line 2 states "said scaled vector...said analog". Since there is no mention of a "scaled vector" previously, line 2 should be changed to --said vector...an analog--.

Claim 80, line 5 states "the Nyquist criteria". This needs to be changed to --Nyquist criteria--.

Claim 81, line 8 states "the three sequential symbols". This should be changed to --the three symbols--.

Renumbered claim 84, line 10; and claim 97, line 15 state "each comprised of a plurality". This needs to be changed to --each information vector comprised of a plurality--.

Renumbered claim 84, line 11; and claim 97, line 16 state "each of which". This needs to be changed to --each received constellation point--.

Renumbered claim 84, line 16 states "each comprised of corrected". This needs to be changed to --each corrected information vector comprised of corrected--.

Renumbered claim 84, line 20; and claim 97, line 24 state "the actual upstream". This needs to be changed to --an actual upstream--.

Renumbered claim 96, line 4 states "the process of receiving iterative". This needs to be changed to --receiving iterative--.

Renumbered claim 102, line 20 states "the results". This needs to be changed to --results--.

Renumbered claim 103, line 16 states "the spectrum". This needs to be changed to --a spectrum--.

Renumber claim 105, line 9 states "any transmitter means for receiving". Since this claim uses "means for...", it is bound to how it is described in the specification. Therefore, line 9 needs to be changed to --transmitter means for receiving--. The word "any" creates a vague and indefinite problem when used with "means for..."

Renumbered claim 105, line 19 states "sai remote". This needs to be changed to --said remote--.

Renumbered claim 105, line 22 states "said first frequency". This needs to be changed to --a first frequency--.

Renumbered claim 106, lines 8-9 state "are to use to transmit...the spectrum of data". This needs to be changed to --are to be used to transmit...a spectrum of data--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 72, renumbered and 84-96 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 72, the phrase "of like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "of like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Regarding renumbered claim 84, lines 8 and 18 disclose "said master clock". It is not clear which master clock lines 8 and 18 are referring to; i.e. is it the master clock from line 2 or one of the master clocks from line 4?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seshadri et al. (U.S. Patent 5,289,501) in view of Ricketts (U.S. Patent 4,475,208).

Regarding claim 5, Seshadri discloses, "a central unit modem apparatus comprising:

a framing circuit having a memory and circuitry to receive downstream data and store it in said memory organized as frames of data each frame comprising one or more symbols (figure 1, element 120 which is further seen in figure 4 where data is stored in a buffer), and having circuitry to read data out of said memory and present said downstream data at an output (figure 4, elements 122, 123, and 124 show the outputs of the data from memory);

a transmitter coupled to receive said downstream data from said output and having circuitry to multiplex said downstream data onto a transmission media using any form of multiplexing and any form of modulation (figure 1, elements 121 and 151 where the stream on element 121 is multiplexed data and element 151 modulates the data before transmission); and

a...multiplexed receiver coupled to receive modulated upstream signals from a plurality of remote unit modems and having circuitry to demodulate and demultiplex said upstream signals (figure 2 shows the receiver in general and the demodulater 211, and demultiplexer 231) and detect upstream data from said demodulated, demultiplexed upstream signals (figure 2, element 253)."

However, Seshadri lacks what Ricketts discloses, that the receiver is of a "synchronous code division" type (figure 4, element 23 indicates a code division type receiver). It should be further noted that they type of network used for communication, TDMA, FDMA, CDMA, SCDMA, etc. is a matter of design choice. It is completely up to the designer of the communications network which type of transmission system is used.

It would have been obvious to one with ordinary skill in the art at the time of invention to include the code division type receiver for the purpose of encrypting the transmitted data. The motivation for encrypting data is so that third parties cannot listen in or "steal" transmitted data (Ricketts, col. 1, lines 27-40).

Regarding claim 6, Seshadri and Ricketts disclose the modem unit of claim 5. However, Seshadri lacks what Ricketts further discloses, "said transmitter includes circuitry to transmit downstream information defining the phase and frequency of a master clock signal and a master carrier signal, and wherein said upstream signals include signals therein which define the phase and frequency of clock and carrier signals used in said remote unit modems to generate said upstream signals (figure 3, elements 32 gives a master clock at a given frequency used to modulate the outputted

signal; it should also be noted that all transmitted signals in a communication have a given phase and frequency determined by the transmitter), and wherein said synchronous code division multiplexed receiver includes tracking loop circuitry to track the phase and frequency of the clock and carrier signals used by each remote unit modem and generate clock and carrier signals locked in phase and frequency to the clock and carrier signals used in said remote unit modem to generate said upstream signals (figure 4, element 61 where it is known in the art that a PLL is phase and frequency tracking device), and circuitry to use said generated clock and carrier signals to demodulate and demultiplex said upstream signals and detect said upstream data from said demodulated, demultiplexed upstream signals (figure 4, elements 22, 25, and 26 are all used to demodulate and demultiplex the received data signal)." It would have been obvious to one with ordinary skill in the art to include the phase, frequency, and phase and frequency tracking for the same reasons and motivation as in claim 5.

Renumbered claims 84, 85, 86, 87, and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ricketts and Langewellpott (U.S. Patent 4,587,662) in view of Partridge, III (U.S. Patent 5,440,585).

Since it is not clear in lines 8-9 and 18-19 of claim 84 which master clock "said master clock" refers to, it is assumed the master clock disclosed in line 2.

Regarding claim 84, Ricketts discloses "a head end apparatus comprising:

a master clock for generating a master clock signal (figure 3, element 32);

a master carrier local oscillator for generating a master carrier signal (figure 1, elements 8, 9, and 11 use the frequency of the clock to generate a master carrier signal that is used when transmitting the data);

a demodulator coupled to receive at least master clock signals, for demodulating received radio frequency carriers modulated with upstream data by one or more remote unit modems and output one or more result vectors of multiplexed upstream data, each result vector comprised of a plurality of chips (figure 4 is a general view of a receiver, elements 20 and 22 use the frequency and clock of the transmitted data to demodulate and recover the transmitted data)..."

However, Ricketts lacks what Langewellpott discloses, "adjustment means for receiving said information vectors transmitted by each said remote unit modem and using preamble data therein to correct for phase and amplitude errors in data transmitted by each said remote unit modem and outputting corrected information vectors, each [corrected information vector] comprised of corrected constellation points (figure 1, element 21 which is further described in col. 4, lines 52-66); a demultiplexer coupled to receive said result vectors and said master clock and functioning to demultiplex the data in said result vectors so as to output one or more information vectors (figure 1, element 20 implies that at the receiving end there must be a demultiplexer to "undo" the multiplexing of element 20), each [information vector] comprised of a plurality of received constellation points, each [received constellation point] may or may not be corrupted by channel impairments (figure 1, element 15 whereby, as is known in the art, making a decision on the data in terms of the correct

symbol value, means a constellation point is determined; further any data sent over a transmission media can always have impairments); a detector...coupled to receive said master clock and said corrected constellation points of said corrected information vectors and functioning to detect and output [an] actual upstream data corresponding to each said corrected constellation point that was transmitted by each said remote unit modem (col. 4, lines 52-66 in combination with figure 1, element 22 where, as is known in the art, a detector is used to detect the corresponding constellation points)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the adjusting means, demultiplexer, and detector for the purpose of reconstructing the received signal. The motivation for reconstructing the signal is to complete communication.

Ricketts and Langewellpott however, further lack what Partridge discloses the detector is "comprised of at least a slicer (figure 1, element 220)".

It would have been obvious to one with ordinary skill in the art at the time of invention to include the slicer for the purpose of identifying the symbols in the signal (Partridge, col. 8, lines 35-36). The motivation for identifying the symbols in the signal is again to allow the complete reconstruction of the received signal to complete communication.

Regarding renumbered claims 85 and 86, Ricketts, Langewellpott, and Partridge disclose the head-end of claim 84. However, Langewellpott and Partridge lack what Ricketts further discloses, "said demodulator, demultiplexer, adjustment means and

detector are all part of a synchronous time division multiplexed data receiver, and wherein said demodulator uses both said master carrier and said master clock signals to demodulate said radio frequency signals modulated with upstream (figure 4 where the demodulation and adjustment of the signal must use the master carrier frequency and master clock signals to perform their respective functions; it should be further noted here that the type of receiver, i.e. time division or code division, is a matter of design choice and completely dependent on the designers preferences)." It would have been obvious to one with ordinary skill in the art to include the use of the master carrier and clock for the same reasons and motivation as in claim 84.

Regarding renumbered claim 87, Ricketts, Langewellpott, and Partridge disclose the head-end of claim 84. However, Langewellpott and Partridge lack what Ricketts further discloses, "a downstream transmitter of any type to transmit downstream data to said remote unit modems (figure 3 is a general model of a transmitter used in a communication system), and wherein said demodulator, demultiplexer, adjustment means and said detector are all part of an upstream receiver (figure 4 shows a general model of a receiver in a communication system which must include all appropriate components)." It would have been obvious to one with ordinary skill in the art to include the transmitter and receiver for the same reasons and motivation as in claim 84.

Regarding renumbered claim 95, Ricketts, Langewellpott, and Partridge disclose the head-end of claim 87. However, Langewellpott and Partridge lack what Ricketts

further discloses, "power alignment means for receiving training data transmitted by each remote unit modem and adaptively adjusting to a gain correction factor which minimizes receive errors and transmitting the gain level which caused minimum errors to said remote unit modem which transmitted said training data (figure 4, element 18 where it is known in the art that an AGC, Automatic Gain Control, is used to compensate for attenuation, such as power loss, and this is done through the use of the incoming data, typically training data)." It would have been obvious to one with ordinary skill in the art to include the power alignment means for the same reasons and motivation as in claim 87.

Renumbered claims 97-100, and 104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ricketts in view of Langewellpott.

Regarding claim 97, Ricketts discloses "a process for receiving upstream data in a central unit modem transmitted by a plurality of remote unit modems in a digital data communication system comprised of a plurality of remote unit modems coupled to said central unit modem by a shared transmission medium, comprising the steps of:

generating a master clock signal in said central unit modem (figure 3, element 32);

generating a master carrier signal in said central unit modem (figure 1, elements 8, 9, and 11 use the frequency of the clock to generate a master carrier signal that is used when transmitting the data);

transmitting data to said remote unit modems from which said master clock and master carrier signals can be recovered in each remote unit modem (figure 4 where the data coming in must have been transmitted);

using at least said master clock signal in said central unit modem to demodulate upstream radio frequency transmissions from said remote unit modems that contain upstream data to generate one or more result vectors of multiplexed upstream data, each result vector having a plurality of chips as elements thereof (figure 4 is a general view of a receiver, elements 20 and 22 use the frequency and clock of the transmitted data to demodulate and recover the transmitted data)..."

However, Ricketts lacks what Langewellpott discloses, "demultiplexing said result vectors using said master clock so as to generate one or more information vectors, each comprised of a plurality of received constellation points each of which may or may not be corrupted by channel impairments (figure 1, element 20 implies that at the receiving end there must be a demultiplexer to "undo" the multiplexing of element 20); using known preamble data transmitted by each remote unit modem as part of upstream data transmitted by that remote unit modem to derive amplitude and phase error correction factors for use in receiving upstream data transmitted by that remote unit modem.and using said amplitude and phase error correction factors to correct each said received constellation point to generate a corrected constellation point (figure 1, element 21 which is further described in col. 4, lines 52-66); detecting the actual upstream data that corresponds to each said corrected constellation point synchronously with said master clock (col. 4, lines 52-66 in combination with figure 1,

element 22 where, as is known in the art, a detector is used to detect the corresponding constellation points)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the preamble data for amplitude and phase error correction, demultiplexer, and detector for the purpose of reconstructing the received signal. The motivation for reconstructing the signal is to complete communication.

Regarding renumbered claim 98, Ricketts and Langewellpott disclose the method of claim 97. However, Langewellpott lacks what Ricketts further discloses, "said demodulating step is accomplished by generating from said master clock signal a carrier signal matched in frequency to the upstream carrier signal used by each remote unit modem to transmit upstream data (figure 4, elements 20 and 22 use the generated master clock and carrier signal to demodulate the received data; further it should be noted that to demodulate a signal, it is necessary to generate the used clock and carrier signal)." It would have been obvious to one with ordinary skill in the art to include the demodulation for the same reasons and motivation as in claim 97.

Regarding renumbered claim 99, Ricketts and Langewellpott disclose the method of claims 97. However, Ricketts lacks what Langewellpott further discloses, "said demultiplexing step comprises demultiplexing time division multiplexed upstream data (figure 1, element 20 which multiplexes in time as suggested by col. 4, line 51)." It would

have been obvious to one with ordinary skill in the art to include the time division demultiplexing for the same reasons and motivation as in claim 97.

Regarding renumbered claim 100, Ricketts and Langewellpott disclose the method of claim 98. However, Langewellpott lacks what Ricketts further discloses, "said demultiplexing step comprises despreading the spectrum of spread spectrum multiplexed upstream (figure 2, element 3 shows that the system operates using spread spectrum technology)." It would have been obvious to one with ordinary skill in the art to include the spread spectrum despreading for the same reasons and motivation as in claim 98.

Regarding claim 104, Ricketts discloses "a process for bidirectional synchronous time division multiplexed communication of digital data to a central unit modem connected from a plurality of remote unit modems over a shared transmission medium, comprising the steps of:

generating a master clock signal in said central unit modem (figure 3, element 32);

generating a master carrier signal in said central unit modem (figure 1, elements 8, 9, and 11 use the frequency of the clock to generate a master carrier signal that is used when transmitting the data);

transmitting data to said remote unit modems from which at least said master clock can be recovered in each remote unit modem (figure 4 where the data coming in

must have been transmitted), and transmitting downstream data in frames using any modulation and multiplexing scheme including no multiplexing such that each frame is broadcast to all remote unit modems (figure 3 shows the encoded data being outputted from element 15)..."

However, Ricketts lacks what Langewellpott discloses, "using said master clock signal and said master carrier signal in said central unit modem and using known preamble data transmitted by each remote unit modem as part of upstream data transmitted by that remote unit modem to derive amplitude and phase error correction factors for use in receiving upstream data transmitted by that remote unit modem (figure 1, element 21 which is further described in col. 4, lines 52-66); using said master clock signal and said master carrier signal in said central unit modem to demodulate and demultiplex upstream data transmitted as a plurality of time division multiplexed constellation points by each remote unit modem (figure 1, element 20 implies that at the receiving end there must be a demultiplexer to "undo" the multiplexing of element 20) and using said amplitude and phase error correction factors developed for each remote unit modem to recover the upstream data encoded in each received constellation point (figure 4, element 18 and element 61 are used to correct amplitude and phase error factors)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the preamble data for amplitude and phase error correction, demultiplexer, and detector for the purpose of reconstructing the received signal. The motivation for reconstructing the signal is to complete communication.

Renumbered claim 105 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ricketts and Langewellpott in view of Gutleber (U.S. Patent 4,460,992).

Regarding claim 105, Ricketts discloses "a transceiver circuit in a central unit modem apparatus for providing multiple user simultaneous access for supplemental digital data services via a shared transmission medium coupled between said central unit modem and a one or more physically distributed remote unit modems, comprising:

a transmitter comprising:

a master clock (figure 3, element 32);

means for generating a master carrier (figure 1, elements 8, 9, and 11 use the frequency of the clock to generate a master carrier signal that is used when transmitting the data);

transmitter means for receiving downstream data intended for said remote unit modems and transmitting said downstream data to said remote unit modems using said master clock and said master carrier (figure 4 where the data coming in must have been transmitted), said transmitter means including means for transmitting data encoding said master clock and said master carrier to all said remote unit modems on one or more radio frequency carriers in a first frequency band (figure 4 where data in a communication system is always transmitted using a carrier frequency and as seen by element 63, a given band is allowed to be transmitted)..."

However, Ricketts lacks what Langewellpott discloses, "a synchronous code division or synchronous time division multiplexed receiver means for using at least said

master clock and master carrier and preamble data transmitted by each said remote unit modem prior to transmission of upstream payload data to demodulate, demultiplex and recover upstream payload data transmitted by multiple remote unit modems (figure 1, element 21 which is further described in col. 4, lines 52-66) where each sai[d] remote unit modem uses a recovered master clock on one or more carriers synchronized to a recovered version of said master carrier (figure 4, where the PLL and corresponding tracking devices will automatically track the phase and frequency of each signal)..."

Ricketts and Langewellpott lack what Gutleber discloses, the "frequency translated to a second frequency band that does not interfere with said first frequency band in which said master carrier is transmitted (col. 7, lines 1-4), said remote unit modems transmitting simultaneously on said second frequency band using synchronous code division multiplexing or synchronous time division multiplexing to separate the upstream payload data transmitted by each remote unit modem (col. 6, lines 66-col. 7, lines 1-4)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the carrier frequencies of different bands for transmission for the purpose of having an upstream frequency band and a downstream frequency band. The motivation for having two bands with two different frequency bands is so that interference is reduced.

Renumbered claim 106 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ricketts, Langewellpott, and Gutleber as applied to claim 105 above, and further in view of Turban (U.S. Patent 5,373,502).

Regarding claim 106, Ricketts, Langewellpott, and Gutleber disclose the transceiver of claim 105. However, Ricketts, Langewellpott, and Gutleber lack what Turban discloses, "means for receiving bandwidth requests from said remote unit modems, and for awarding bandwidth in accordance with any scheme to arrive at one or more bandwidth awards (col. 8, lines 40-44 where the base station acts as the receiving end of bandwidth requests), and for allocating spreading codes or timeslots for use by said remote unit modems identified in said bandwidth awards in transmitting upstream frames in accordance with said bandwidth awards (col. 8, lines 40-44), and for transmitting said bandwidth awards in downstream management and control message to said remote unit modems indicating which spreading codes or timeslots specified remote unit modems are to use to transmit upstream data in specified frames or to spread the spectrum of data in specified upstream frames identified in said downstream messages (col. 8, lines 40-49 where the allocation is implied to be done in the form of control messages and uses codes to allocate)." It would have been obvious to one with ordinary skill in the art at the time of invention to have bandwidth allocation requests for the purpose of controlling which users get what bandwidth. As is known in the art, the motivation for controlling the bandwidth of a system by allocating it, allows the system to use resources as efficiently as possible.

Allowable Subject Matter

Claim 7 and renumbered claims 88-94, 96, and 101-103 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 74-82 are allowable because the prior art of record fails to teach, in combination with other claim limitations, "a frame circuit for receiving a time division multiplexed stream of data comprised of N timeslots per frame...storing in a memory the data from selected ones of said timeslots assigned to said transmitter...generating an information vector having N elements corresponding to said selected timeslots assigned to said transmitter from which data was stored by said framer circuit...each of said elements of said information vector corresponding to timeslots...comprised of a plurality of bits constitute a fraction of the data of one of said timeslots assigned to said transmitter".

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 28 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 5,768,269. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 10 of '269 discloses applicant's invention as claimed in claim 28.

Claim 10 of U.S. Patent '269 discloses "a central unit transceiver (col. 41, lines 22-25)...including multiplexer and modulator circuits (col. 41, lines 37-48)..."including a plurality of remote unit transceivers including demodulating and demultiplexing and detecting circuitry (col. 41, lines 22-25 and 50-col. 42, lines 1-7)...including deframer circuitry (col. 42, lines 8-10)...said central unit transceiver including demodulator and demultiplexing circuitry...and detector circuitry...and deframer circuitry (col. 41, lines 22-25 and 50-col. 42, lines 1-10)". Although claim 10 of U.S. Patent '269 and claim 28 of the instant application are not identical in claim language, the same principle of the invention, i.e. the components used in digital type communication, is embodied in both claims.

Claim 72 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 15 of U.S. Patent No. 6,356,555 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 15 of '555 discloses applicant's invention as claimed in claim 72.

Claim 15 of U.S. Patent '555 discloses "a framing [and] addressing [and] packetizing circuit (col. 123, lines 20-22)...a master clock (col. 123, lines 30-31)...a master carrier local oscillator (col. 123, lines 28-29)...a transmitter for receiving data...and using said data to modulate said carrier signals (col. 123, lines 46-51)...using said carrier for synchronization (col. 123, lines 32-36)...a synchronous code division multiplexed receiver (col. 123, lines 32-36)...a gap monitor circuit...for monitoring each frame for a presence of ranging signals...and further using the ranging signals to see that frames transmitted by various remote unit modems arrive at said central unit modem at the same time (col. 123, lines 52-58)"

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Kading whose telephone number is (571) 272-3070. The examiner can normally be reached on M-F: 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joshua Kading
Examiner
Art Unit 2661

September 28, 2004

KENNETH VANDERPUYE
PRIMARY EXAMINER